

REMARKS

In response to the Office Action dated October 9, 2001, claims 1, 2 and 6 are amended and claim 13 is added. Claims 1-13 are now active in this application. No new matter has been added.

Formal drawings are submitted herewith, together with a drawing correction for Fig 3A to change CKT 20 to UNIT 20 to provide consistency. A separate paper requesting approval is submitted concurrently herewith.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 1-5 stand rejected under 35 U.S.C. §112, first paragraph as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The Examiner stated, "It is unclear how the device operates when it comprises an instantaneous position changing means and a moderately position changing means or specifically state what component(s) of the device serves as a moderately position changing means."

To expedite prosecution, claim 1 is amended to more clearly recite the subject matter relating to position changing means. More specifically, claim 1 is amended to recite, *inter alia*:

position changing means including an actuator for changing a position of said piston with said piston holding means by a short distance with respect to said pipette holding means in response to a high speed signal to jet a portion of a liquid in said pipette through said nozzle as a drop.

Thus, the position changing means, as amended, would comprises, for example, the step motor 3 or the piezoelectric actuator 11. The amended position changing means also deletes the term "instantaneous" and now delineates that it includes an actuator. Moreover, instantaneous position changing operation is provided by a high speed signal to jet a portion of the liquid in the pipette. This is subject matter is supported by the description at page 7, lines 8 to 26.

Similarly, claim 2 is amended to more clearly recite the subject matter relating to the other (another) position changing means. In view of the amendments to claims 1 and 2, claims 1-5, as now amended, are believed to be clear.

The Examiner notes also that claims 1, 2 and 6 include relative terms. In this regard, it should be noted that in rejecting a claim under the first paragraph of 35 U.S.C. § 112, it is incumbent on the Patent and Trademark Office to establish a basis in fact and/or cogent technical reasoning to support the conclusion that one having ordinary skill in the art would not have been able to practice the claimed invention *armed with the supporting specification* (emphasis added), without undue experimentation. See *In re Marzocchi*, 439 F.2d 220, 169 USPQ 367 (CCPA 1971). See also *In re Strahilevitz*, 668 F.2d 1229, 212 USPQ 561 (CCPA 1982); *In re Angstadt*, 537 F.2d 498, 190 USPQ 214 (CCPA 1976).

Furthermore, when a term of degree is presented in a claim, first a determination is to be made as to whether the specification provides some standard for measuring that degree. Even if it does not, a determination is made as to whether one of ordinary skill in the art, in view of the prior art and the status of the art, would be nevertheless reasonably apprised of the scope of the invention.

In this regard, attention is directed to the description at page 7, lines 12-17. In view of this description, it is Applicants' position that the Official Action is silent as to any basis in fact and/or technical reasoning to logically support the imposed rejection for lack of adequate enabling support under the first paragraph of 35 U.S.C. § 112. More specifically, the Examiner has not provided any fact(s) or technical reasoning to logically explain why one having ordinary skill in the art, armed with the present disclosure, would not understand what is intended by "moderately changing said position of said piston with said motor to suck and discharge a desired amount of said liquid", and/or why one skilled in the art to which the invention pertains, or with which it is most nearly connected, would not have been able to practice the claimed invention.

At any rate, to expedite prosecution, claim 2 is amended to delete the term "moderately". Claims 1, 2 and 6 are amended also to delete the word "instantaneous". Applicants would like to note that the now recited "high speed signal" and "low speed signal" are defined by the jetting operation and the sucking operation. Thus, these terms are believed to be clearly defined.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 102 AND § 103

I. Claims 1-3, 5-8 and 10-12 are rejected under 35 U.S.C. §102(e) as being anticipated by Pelc et al. (hereinafter, Pelc).

The rejections are respectfully traversed.

Anticipation, under 35 U.S.C. § 102, requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference.

Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983).

Claim 1 recites, *inter alia*:

... said pipette holding means (in response to a high speed signal) to jet a portion of a liquid in said pipette through said nozzle as a drop.

Pelc fails to disclose or suggest that a portion of a liquid in the pipette is jet through the nozzle as a drop as recited in independent claim 1. Independent claims 6 and 11 have similar recitations, and new independent claim 13 stresses this jetting feature. Pelc also fails to disclose or suggest the position changing means defined by claim 1 and step (b) in claim 6. Thus, independent claims 1, 6 and 11, and new independent claim 13 are patentable over Pelc, as are dependent claims 2, 3, 5, 7, 8, 10 and 12.

II. Claims 4 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pelc in view of Kelly et al., relied upon by the Examiner to disclose a pipette tip that may be mounted on the end of a pipette shaft.

However, as claims 1 and 6 are patentable over Pelc, claim 4 depending from claim 1 and claim 9 depending from claim 6 are patentable over Pelc also, even when considered in view of Kelly et al.

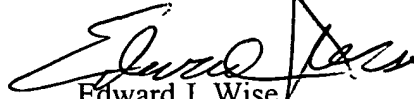
CONCLUSION

Accordingly, it is urged that the application, as now amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE SPECIFICATION

Please amend the specification as follows.

At page 10, third paragraph:

In step 125, the control [circuit] unit 20 drives the linear stepping motor 3 to change the position of piston by about 150 μ m to align the surface of the liquid nozzle 1a with the tip position 1c of the nozzle 1a to prepare the next pipetting operation.

IN THE CLAIMS

Please amend claims 1, 2 and 6 as follows.

1. (AMENDED) A pipetting apparatus comprising:

a pipette having a nozzle;

pipette holding means for holding said pipette;

a piston fluid-tightly sliding along an inner wall of said pipette;

piston holding means for holding a portion of said piston; and

[instantaneous] position changing means including an actuator for changing a position of said piston with said piston holding means by a short distance with respect to said pipette holding means in response to a high speed signal to jet a portion of a liquid in said pipette through said nozzle as a drop.

2. (AMENDED) A pipetting apparatus as claimed in claim 1, wherein said [instantaneous position changing meant] actuator comprises a motor, said pipetting apparatus further comprises [moderately] another position changing means including said motor for

[moderately] changing said position of said piston with said motor in response to a low speed signal to suck and discharge a desired amount of said liquid, and said motor is commonly used between said [instantaneous] position charging means and said another [moderately] position changing means.

6. (AMENDED) A method of pipetting a liquid with a pipette and a piston fluid-tightly sliding along an inner wall of said pipette comprising the steps of:

(a) sucking said liquid with said piston; and

(b) [instantaneously] changing a position of said piston with respect to said pipette by a short distance in response to a high speed signal to jet a portion of a liquid in said pipette as a drop through said nozzle.

Please add new claim 13 as follows:

13. (NEW) A pipetting apparatus comprising:

a pipette having a nozzle;

pipette holding means for holding said pipette;

a piston fluid-tightly sliding along an inner wall of said pipette;

piston holding means for holding a portion of said piston; and

jetting means including an actuator for jetting a portion of a liquid in said pipette through said nozzle as a drop by changing a position of said piston with said piston holding means by a short distance with respect to said pipette holding means in response to a high speed signal.